

## **REMARKS/ARGUMENTS**

Responsive to the Office Action of February 2, 2006, the Examiner's comments and the applied art have been noted and studied. In response, Applicants have amended the existing claims in a manner that, it is submitted, makes the present claims allowable. Certain dependent claims have also been amended. No new matter has been added. It is respectfully submitted the revision made and discussed herein in response to the Examiner's comments place the application in a condition of allowance.

### **Formal Matters**

Turning first to formalities, Claims 3, 6, 8, 17, 19, and 21 were objected to as having inconsistent structures. However, the reasoning of the objections is unclear. The Office Action states Claim 2 recites the first switch is "in parallel between the neutral and ground leads" while dependent Claim 3 recites the first switch is "in series with the neutral lead." However, the language of the claims 2 and 3 does not appear to mention "parallel" or "series" circuit arrangements, but rather the positions of a switch. Similar comments are applicable to the rejections of each of Claims 6, 8, 17, 19, and 21. Accordingly, Applicants request clarification.

### **Prior Art**

The rejections of Independent Claims 1, 15, and 28 under 35 U.S.C. §§ 102 and 103 based on U.S. Patent Nos. 5,179,490 ("Lawrence"), 5,136,455 ("Billingsley"), and 6,040,969 ("Winch") is noted. It is submitted, however, that neither reference alone, nor in combination, shows, teaches, or renders obvious the subject matter of the claims presented herein. Also, the Examiner should note that on Page 3 of the Non-Final Action, Lawrence was referred to as "US 6,288,917," which is not the case. The Lawrence patent of record is U.S. Patent No 5,179,490. After reviewing the action, the rejections suggest the Examiner applied US Pat. No. 5,179,490 and Applicants proceed on that basis.

### **Discussion**

At the outset, Applicants would like to discuss how the apparatus of the present invention is significantly different from that of Lawrence. The present invention is directed to a different

type of circuit and a different problem. The present invention is directed to a transient voltage surge suppressor ("TVSS") apparatus which also reduces and/or eliminates ground noise fed from a power utility outlet to microprocessor-based equipment and the like. However, in contrast, Lawrence is addressed toward the prevention of radio frequency interference ("RFI") being introduced back into the power utility lines when RFI is detected from the load. The Lawrence circuit is a controller which interrupts the operation of a load (i.e., high voltage AC equipment-see Col. 1, Lns. 12-17) once the controller detects RFI fed from the load. In other words, the present invention protects a load by suppressing noise fed from a power utility outlet, while Lawrence protects a power network from voltage transients fed from the load. Therefore, Lawrence is directed toward an altogether different apparatus than that of the present invention and, thus, cannot read upon Applicants' claim language.

The electrical phenomenon of noise (reduction of which is the subject of the present invention) is a brief voltage differential that can appear between the ground and hot or neutral lines. The amount of noise present on a power circuit can be different at any given time. The source of this noise can originate at the electrical distribution system external to the building, from a distribution panel inside the building, or other loads on the network. The noise is the result of the power circuit's dynamic nature due to ever changing load requirements.

One cause of noise can be the difference between the potentials of two remote grounds. This is often the case when dealing with microprocessor-based equipment, such as networked computer equipment, for example. Typical effects of this can be sporadic reboots of the computer, freezing, and bad data transfer in the computer. Network interface cards, serial ports, modems, and other computer components can easily fall victim to the effects of this phenomena.

Accordingly, the inventors of the present application realized the need for an apparatus which, in addition to surge protection for the microprocessor-based equipment, also reduces and/or eliminates ground noise being fed from the power utility line. In rejection of the present claims, the Examiner has applied references (primarily Lawrence) which, alone or in combination, fails to anticipate or render obvious Applicants' invention for two central reasons: (1) Lawrence and the present invention do not address the same problem, and (2) none of the applied references disclose, refer to, or render obvious, the ground noise reducing LC circuitry as claimed in the present invention.

## **I. Lawrence And The Present Invention Do Not Address The Same Problem.**

Lawrence and the present invention are directed to two entirely different problems. The present invention addresses ground noise, while Lawrence does not. Throughout the Specification, Applicant's discuss how their system is structured to reduce and/or eliminate ground noise fed from the power utility outlet. (Par. [0025, 0030, & 0031]). These features are also reflected in the independent claims. In direct contrast, Lawrence discloses a system which detects RFI fed backwards into the power network from the load. (Abstract; Col. 5, Ln. 8-16).

RFI is a form of conducted electromagnetic interference and is to be distinguished from ground noise. RFI can be introduced into the power network by the load itself and can cause numerous problems, such as system failures. The phenomenon is exactly why Lawrence protects the power utility system from RFI fed back into the power utility outlet from the load.

However, again, the present invention is directed to protecting the load from ground noise effects fed from the utility outlet, not RFI fed from the load. This feature is clearly recited in the independent claim language. Accordingly, Lawrence cannot read upon any of the present claims and Applicants respectfully request allowance of the present claims.

## **II. Neither Lawrence, Billingsley, or Winch Disclose a Ground Noise Reduction LC Circuit As Claimed**

Unlike the present invention, Lawrence fails to disclose an LC circuit adapted to reduce and/or eliminate ground noise. As recited in the independent claims, the present invention comprises an LC filter adapted to reduce and/or eliminate ground noise. In direct contrast, Lawrence does not utilize an LC filter circuit; rather, he uses an RF choke. This choke is designed to reduce RFI generated by an arc over at the load and prevents the RFI from being fed back into the power utility network. (Col. 4, Ln. 43-53). When RF is fed backwards from the load, Lawrence's circuitry 100 (Fig. 2) causes the thyristor 60 to stop conducting, thereby interrupting all power to the load. Disabling the load is undesirable in Applicants' system because sensitive microprocessor-based electronics, such as computers, can comprise volatile D-RAM memories, which lose data when the power supply is interrupted. Thus, Lawrence could not possibly read upon the independent claims because it fails to disclose the LC circuit.

Moreover, the Office Action did not address the ground noise reduction feature at all. In particular, each independent claim recites an LC filter component *adapted to reduce or eliminate*

*ground noise or noise between ground and neutral leads.* In rejecting this portion of the claims, the Office Action only states the noise reduction capabilities are disclosed in Lawrence. However, the Office Action fails to explain how Lawrence's circuit reduces or eliminates ground noise or where this is discussed in Lawrence. Simply because Lawrence's circuit comprises an inductor and capacitor does not mean it is an LC filter provided for noise reduction. Furthermore, Applicants found no mention at all of noise reduction in Lawrence. Accordingly, in addition to the reasons previously discussed, Lawrence fails to disclose this limitation and Applicants respectfully request the rejection be withdrawn.

Neither Billingsley nor Winch disclose the ground noise reducing LC filter as claimed. In addition to its noise reducing capabilities, the independent claims also require the inductor of the LC filter to be located within the ground lead. Neither Billingsley nor Winch disclose this feature. Billingsley only discloses the use of a diverter, clamping, and impedance network and completely fails to disclose an LC filter. Winch, on the other hand, does disclose an LC filter; however, it is not located in the ground lead. Accordingly, these references do not render the claims obvious under 35 U.S.C. § 103. Thus, even if Winch were combined with other prior art as proposed, the subject matter of Applicants' claims would not be present. Therefore, Applicants respectfully request the rejections of all claims be withdrawn.

### **III. Conclusion**

In summary, for reasons detailed above, it is submitted the claims now present in the application are allowable. Accordingly, allowance of all claims is submitted to be in order, and such action is respectfully requested. Applicants request early notice if there are any outstanding issues that have not been addressed in this response. The Commissioner is authorized to charge any additional fees incurred in this application to Deposit Account No. 50-0259. Should the Examiner have any inquiries concerning this matter, please direct telephone calls to the undersigned at (713) 221-1377, or Jade O. Laye (Registration No. 54,255) at (713) 221-1159.

Respectfully submitted,



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